

U.S. FISH AND WILDLIFE SERVICE - SPOTLIGHT SPECIES ACTION PLAN

Common Name: Mexican gray wolf

Scientific Name: *Canis lupus baileyi*

Lead Region: 2

Lead Field Office: New Mexico Ecological Services Field Office

Species Information:

Status: Gray wolf species, *Canis lupus*, is currently listed as endangered in the lower 48 states, except recently delisted in Idaho and Montana, and listed as experimental in Wyoming. Future status in the Northern Rocky Mountain and Great Lake DPS's may change pending future court decisions. The Mexican gray wolf's status is experimental population, non-essential (subspecies or distinct population recognition to be determined), as restored in the Blue Range Wolf Recovery Area (BRWRA) of Arizona and New Mexico. The status of the Mexican gray wolf in the country of Mexico remains "extinct in the wild," but the government of Mexico plans to begin restoring Mexican gray wolves to select Mexico release sites starting in November 2009.

Recovery Priority Number: The Recovery Priority Number for the Gray wolf species is 15C. The Mexican gray wolf is not currently listed separately as a DPS or subspecies, thus there is no Recovery Priority Number specific to the Mexican gray wolf.

Recovery Plan: Mexican Wolf Recovery Plan, 1982.

The reintroduced population has oscillated between 40 and 60 wolves since 2003. The 1982 Mexican Wolf Recovery Plan contains a primary objective to maintain a captive breeding program and re-establish a viable, self sustaining population of at least 100 Mexican wolves within the subspecies historic range. However, this is not a measurable recovery criterion for delisting as required by section 4(f)(1) of the ESA, but was instead a recommendation to ensure immediate survival of the Mexican wolf.

Most Recent 5-year Review: A 5-Year Review document was completed in 2005 regarding the status of Mexican gray wolves restored to the BRWRA. (See the document entitled, "Mexican Wolf Blue Range Reintroduction Project 5-Year Review, December, 2005.") For the gray wolf species in the lower 48 U.S. states, no document has been completed in the form of a formal 5-Year Review.

Other: 1996 FEIS (Reintroduction of the Mexican Wolf Within Its Historic Range in the Southwestern United States); 1998 Final Rule (50 CFR 1752- 1772); 2003 Mexican Wolf Recovery Program 3-Year Review and Assessment; 2005 Mexican Wolf Blue Range Reintroduction Project 5-Year Review; 2009 Draft Mexican Wolf Conservation Assessment.

Though vacated and remanded via courts, additional information is explained in the 2003 *Federal Register* 68: 15804-15882, Final Rule to Reclassify and Remove the Gray Wolf from the List of Endangered and Threatened Wildlife in Portions of the Conterminous United States; Establishment of Two Special Regulations for Threatened Gray Wolves; Removal of Western DPS; Removal of Eastern DPS; Final and Proposed Rules.

Threats:

Threats related to the destruction, modification, or curtailment of habitat do not likely threaten the Mexican wolf at the current time. Overutilization for commercial, recreational (i.e., hunting), scientific, or educational purposes is not considered a threat to the Mexican wolf because the U.S. Fish and Wildlife Service (Service) does not authorize legal killing or removal of wolves from the wild for those purposes.

Disease is not currently considered a threat based on known disease occurrences and an active vaccination program. A number of viral, fungal, and bacterial diseases and endo- and ectoparasites have been documented in gray wolf populations, but there is little research specific to disease or contaminant issues in Mexican wolves. There is also no evidence to suggest that natural predation upon Mexican wolves is a problem in any way.

Thus, Factors (A), (B), and (C) in section 4(a)(1) of the ESA are not considered to be current threats to the Mexican wolf.

(D) the inadequacy of existing regulatory mechanisms;

Potential inadequacy of regulatory mechanisms in the restored Mexican wolf population include the following factors: (1) overly restrictive boundaries of the BRWRA and regulations governing removal of wolves outside these boundaries; (2) configuration of and restrictions within the Primary and Secondary Recovery Zones inside the BRWRA; (3) management/removal procedures related to livestock depredation (i.e., Standard Operating Procedure 13.0); and (4) failure to complete a revision of the 1982 Mexican Wolf Recovery Plan to include measurable delisting criteria as required by the ESA.

With respect to depredation, consideration is given to livestock grazing practices in the southwest U.S. as a potential factor affecting wolf restoration. The Service is committed to removing or otherwise managing wolves that chronically depredate livestock. In the BRWRA, many of the remote areas contain year-round forest livestock grazing operations (i.e. cattle calves, raise their young, and are present in remote areas year-round), compared to the summer operations in northern wolf restoration areas. Where wolves and livestock coexist year-round, depredations are likely to be greater and the number of vulnerable livestock in an area is likely to be greater. Between 1998 and 2008, 70 wolves were permanently or temporarily removed from the BRWRA due to conflicts with livestock. During this same time period the minimum year end population count never exceeded 60 wolves.

(E) other natural or manmade factors affecting its continued existence;

Manmade factors affecting the continued existence of the restored population include illegal killing of wolves. Illegal shooting of wolves is the single greatest source of wolf mortality in the restored population, resulting in annual population declines of nearly or over 10% in several years. Illegal mortality is hindering the population's growth toward population objectives, especially when combined with management/removal actions (which may function as a mortality).

Research suggests that lack of mating success in male wolves in the captive population may be explained by inbreeding depression on sperm quality in pure lineage Mexican wolves (Asa et al.

2007). Additional research documented that inbreeding depression has resulted in smaller litter sizes in the McBride lineage of the Mexican wolf when compared to cross-lineage litters, demonstrating restored fitness to wolves with mixed ancestry (Fredrickson et al. 2007). Inbreeding is not considered a threat to the captive population of Mexican wolves, but has the potential to decrease the fitness, growth rate, and genetic variation of the restored population, unless representations of the Ghost Ranch and Aragon lineages are increased (Fredrickson et al. 2007).

Combined sources of mortality and removal are consistently resulting in failure rates too high for unassisted population growth. Because of lower reproductive rates, smaller litter sizes, and potential low pup recruitment, the Mexican wolf is more susceptible to population decline at a given mortality rate than other gray wolf populations. Thus, the cumulative impact of identified threats to the restored population, coupled with its biological attributes, is preventing the Mexican wolf population from moving towards recovery. As this is the only known wild population of this subspecies, this effectively puts the population at risk for extinction in the wild.

Targets: The 5-year target for the Mexican gray wolf is to improve species/subspecies conservation status through listing determination(s), recovery planning, recovery implementation, and outreach.

Measures:

Target-related measures for enhancing overall conservation status of the Mexican gray wolf are: (1) determine appropriate listing classification; (2) improve restored population status; (3) maintain maximum genetic diversity in the captive population managed via species survival plan (SSP) cooperators; and (4) improve public information, education and outreach pertinent to Mexican gray wolves and related issues.

Actions:

DETERMINE APPROPRIATE LISTING CLASSIFICATION: Complete a full evaluation of the appropriate listing status for the Mexican gray wolf. Conduct rulemaking to determine the appropriate entity and status under the ESA. [Estimated cost: \$100,000]

IMPROVE CONSERVATION (RESTORED POPULATION) STATUS: Implement at least two of the options below, numbered 1) through 5), in a manner relating to one of more of the following - policy, procedures, population management and/or cooperative measures. The following tasks will help improve the long-term conservation status and recovery success of the restored population(s).

- 1) Enhance and augment the restored population(s) annually in at least one of the following ways: genetic diversity, pup production, pup survival, number of wolf family groups

(packs), number of breeding pairs, number of individual wolves, pairing actions, or protective measures (depredation relief or law enforcement). Two examples of possible enhancement options include the following. [Estimated Cost: \$10,000 to \$40,000]

- a. Genetic Diversity: Increase the representation of the three lineages of Mexican wolf in the restored population to mirror that of the captive SSP population.
 - b. Pup Production, Number of Family Groups (packs), and Number of Individual Wolves: Achieve a 10% increase in annual minimum wolf population counts, or else achieve the addition of at least one breeding pair. This can be accomplished through natural recruitment or releases of captive wolves as an annual contribution toward achieving long-term population goals in the BRWRA.
- 2) Complete an Environmental Assessment (EA) under the National Environmental Policy Act to address modifications for flexibility in management and restoration. Address at least one of two potential topics – wolf releases within secondary portions of the BRWRA, or re-define the definition of a breeding pair. Each topic helps to address past species management constraints in need of resolution. [Estimated Cost: \$80,000]
 - 3) Initiate revision of the 1982 Mexican Wolf Recovery Plan to include biologically-based recovery goals and objectives, including recovery criteria. At a minimum, establish a new recovery planning team which consists of experts and/or stakeholders newly appointed to a team and/or subteam(s). [Estimated Cost: \$40,000]
 - 4) Initiate a pilot Interdiction and Incentives Program to address depredation conflicts determined to be caused by Mexican gray wolves. At a minimum, secure initial funds and agreement(s) for initial set-up of the Program and Fund. [Estimated Cost: Some potential funding amounts include \$10,000 (start-up), or \$300,000 (full pilot), or \$6 million (fully-implemented endowment)].
 - 5) Initiate work to improve the Mexican gray wolf 10(j) rule and further define Mexican wolf status outside of the existing 10(j) experimental population area. Conduct an associated Environmental Impact Statement (EIS) which addresses socio-economic concerns, wolf recovery needs and management flexibility. The EIS may address the topics of wolf movements outside BRWRA, maintaining the initial BRWRA wolf population, and alternative approaches to potentially restoring wolves to new sites within historic range (i.e., within the area defined by relevant portions of Mexico, Arizona, Utah, Colorado and Texas). [Estimated Cost: See “Additional Costs” table below; costs can go as high as \$4,200,000 for two FTE’s and 4 years of work.]

MAXIMIZE GENETIC DIVERSITY (SSP/CAPTIVE POPULATION): Implement the Mexican gray wolf species survival plan (SSP) via coordination with the American Zoo and Aquarium Association (AZA) and other cooperators in the USA and Mexico. Enhance coordination among SSP cooperators to incorporate genetic knowledge of Mexican gray wolf lineages to maximize genetic diversity and enhance reproduction capability. When possible, transfer this knowledge in practice to the restored population(s) via releases, pairing, fostering, or other techniques. For example, the original goal in the SSP for representation from the three

Mexican wolf lineages was 80% McBride, 10% Ghost Ranch, and 10% Aragon. After these levels were reached in the captive SSP population, it was determined that the Ghost Ranch and Aragon lineages will slowly increase in percentage over time. We can transfer this knowledge into the wild via restored population(s) and available techniques.

PUBLIC INFORMATION, EDUCATION, OUTREACH: Initiate an interagency coordinated public education and outreach effort across the historic range of Mexican gray wolves. This may initially take the form of early development of a draft interagency strategic plan to address public information needs, reduce or eliminate rumors, establish points of contact, identify possible communication procedures, etc. This may also include mechanisms to keep people informed about Mexican gray wolf restoration, science, legal aspects, and related events, news, and facts.

Responsible parties for the actions: While the Service works with many cooperators (see below under “Role of other agencies”), the Service ultimately retains decision making authority and responsibility under the ESA to achieve recovery and restoration of the Mexican wolf in the wild.

Estimated costs of the actions: Costs per action are described in above in this section. A cost breakdown for conducting a full EIS is described below under “Additional Funding Analysis.”

Role of other agencies:

The current Mexican wolf population is managed jointly by the Arizona Game and Fish Department, New Mexico Department of Game and Fish, USDA-Forest Service, USDA-Wildlife Services, White Mountain Apache Tribe, and the Service. Other cooperators include Greenlee County (Arizona), Sierra County (New Mexico), and the New Mexico Department of Agriculture. Future cooperators may include the San Carlos Apache Tribe and additional counties from Arizona or New Mexico.

The Mexican wolf SSP captive management program is an essential component of Mexican wolf recovery. The SSP was initiated in 1977 to 1980 with the capture of the last remaining Mexican wolves in the wild in Mexico. The SSP is a binational captive breeding program between the U.S. and Mexico whose primary purpose is to raise wolves for restoration purposes for both the U.S. Fish and Wildlife Service and government of Mexico. Specifically, the purpose of the SSP is to re-establish the Mexican wolf in the wild through captive breeding, public education, and research. This captive population is the sole source of Mexican wolves available to re-establish the species in the wild and is imperative to the success of current restoration efforts in the BRWRA and any additional potential restoration areas identified in the future. The Mexican wolf SSP currently houses more than 300 wolves distributed among 48 facilities in the United States and Mexico.

Role of other ESA programs: Programs involved in managing threatened and endangered species via partner agencies contribute heavily to Mexican gray wolf recovery and management via the agencies described above under “Roles of other agencies.” Some of these agencies also cooperate under sections 6, 7, and 10 of the ESA.

Role of other FWS programs:

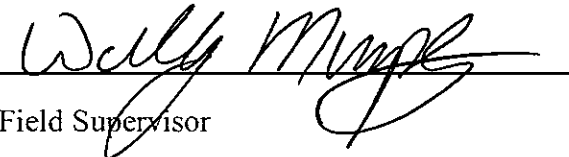
One of the three approved pre-release captive wolf facilities is located on the Sevilleta National Wildlife Refuge. Refuge staff are responsible for maintenance of the facility, while Mexican wolf project personnel are responsible for management of the wolves. Contracting and General Services within the Service contribute via coordination of agreements, etc.

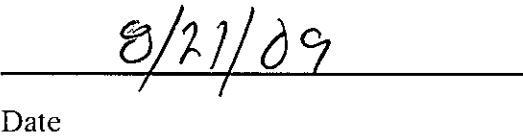
Additional funding analysis:

The costs associated with an Interdiction and Incentives Program are \$300,000 for an initial pilot effort, followed by a \$6 million one-time endowment to support a long-term program on behalf of ranchers and Mexican gray wolves.

The estimated costs of a new, 4-year long EIS are shown in the table below.

Fiscal Year	2010	2011	2012	2013	Total
Dedicated staff (2 FTE)	\$160,640	\$165,562	\$170,530	\$175,646	\$672,378
Meetings/travel/documents	\$50,000	\$50,000	\$280,000	\$300,000	\$680,000
Contracts	\$950,000	\$950,000	\$950,000	-	\$2,850,000
Total	\$1,160,640	\$1,165,562	\$1,400,530	\$475,646	\$4,202,378


Field Supervisor


Date

References

Asa, C., P. Miller, M. Agnew, J.A.R. Rebolledo, S.L. Lindsey, M. Callahan, and K. Bauman. 2007. Relationship of inbreeding with sperm quality and reproductive success in Mexican wolves. *Animal Conservation* 10:326-331.

Fredrickson, R.J., P. Siminski, M. Woolf, and P.W. Hedrick. 2007. Genetic rescue and inbreeding depression in Mexican wolves. *Proceedings of the Royal Society B* 274: 2365-2371.